

## Title (en)

Programmable iterated elongation: a method for manufacturing synthetic genes and combinatorial DNA and protein libraries

## Title (de)

Programmierbare wiederholte Ausdehnung: Verfahren zum Herstellen synthetischer Gene und kombinierter DNA und Proteinbibliotheken

## Title (fr)

Allongement itéré programmable : procédé de fabrication de gènes de synthèse et ADN combinatoire et bibliothèques de protéines

## Publication

**EP 2487616 A1 20120815 (EN)**

## Application

**EP 12167464 A 20070619**

## Priority

- EP 07736483 A 20070619
- US 81457006 P 20060619
- US 92404207 P 20070427

## Abstract (en)

A method for manufacturing synthetic genes and combinatorial DNA and protein libraries, termed here Divide and Conquer-DNA synthesis (D&C-DNA synthesis) method. The method can be used in a systematic and automated way to synthesize any long DNA molecule and, more generally, any combinatorial molecular library having the mathematical property of being a regular set of strings. The D&C-DNA synthesis method is an algorithm design paradigm that works by recursively breaking down a problem into two or more sub-problems of the same type. The division of long DNA sequences is done in silico. The assembly of the sequence is done in vitro. The D&C-DNA synthesis method protocol consists of a tree, in which each node represents an intermediate sequence. The internal nodes are created in elongation reactions from their daughter nodes, and the leaves are synthesized directly. After each elongation only one DNA strand passes to the next level in the tree until receiving the final product. Optionally and preferably, error correction is performed to correct any errors which may have occurred during the synthetic process.

## IPC 8 full level

**C12N 15/10** (2006.01); **G06F 19/00** (2011.01); **G16B 30/20** (2019.01); **G16B 35/10** (2019.01); **G06F 19/22** (2011.01)

## CPC (source: EP US)

**C12N 15/1031** (2013.01 - EP US); **C12N 15/1089** (2013.01 - EP US); **C12N 15/66** (2013.01 - EP US); **G16B 30/00** (2019.01 - EP US); **G16B 30/20** (2019.01 - EP US); **G16B 35/00** (2019.01 - EP US); **G16B 35/10** (2019.01 - EP US); **G16C 20/60** (2019.01 - EP US); **C12Q 1/686** (2013.01 - US)

## Citation (applicant)

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Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

**WO 2007148337 A2 20071227; WO 2007148337 A3 20090430**; EP 2035984 A2 20090318; EP 2035984 A4 20100331;  
EP 2487616 A1 20120815; EP 2487616 B1 20150729; ES 2551577 T3 20151120; US 2010240538 A1 20100923; US 2015252362 A1 20150910;  
US 8962532 B2 20150224

DOCDB simple family (application)

**IL 2007000747 W 20070619**; EP 07736483 A 20070619; EP 12167464 A 20070619; ES 12167464 T 20070619; US 201514607080 A 20150128;  
US 30855707 A 20070619